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## ABSTRACT

Selected reasons for resistance to change in education are discussed, the kinds of resulting behaviors are noted, and suggestions for plausible means of overcoming this resistance are offered. Though the search for excellence and innovation in education are desirable, they are often not sustained for any appreciable period of time and the innovations are often used in a limited manner. The use of computers in higher education is a recent example of this process in operation. Though computers have been widely applied, the potential has not been realized. Cost, lack of access to good software, and teacher resistance to the approach threaten the widespread implementation of computers. Resistance to change is discussed in detail, and resistant behaviors are explained. Such behavior becomes evident when there is an attempt to introduce new methods of instruction in education. Both aggressive (directly attacking) and subtle (stalling for time) resistant behavior is found. Various steps for overcoming resistance are "unfreezing" the old attitude, changing, and refreezing the new attitude. Each faculty member's needs must be considered. Information regarding the innovation must go to all necessary people in a form that is uniquely meaningful to each. Some people may fear economic or job loss or loss of job status because of the innovation, so those introducing the innovation must be aware of these fears and must act in a nonalienating way. Information must focus on things in which the change will and will not result. Too often, the individual will progress to the point of using the innovation, but not in a way that optimizes its potential. This individual must learn to network with others and engage in mutual sharing of ideas and potential uses. Success is based on individual efforts resulting from personal commitment to change. Contains 25 references. (SM)

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Resistance to Computing - 1

Overcoming Resistance to the Use of Instructional  
Computing in Higher Education

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## Resistance to Computing - 2

### Abstract

The history of education has been reactive rather than proactive in relation to instructional innovations. This is one possible explanation for the endless procession of "educational fads." Successful implementation of a change in education requires careful attention to the personal factors involved in the resistance to change. The purpose of this paper is to identify selected reasons for resistance to change, to identify the types of behaviors that result from this resistance and to suggest plausible means for overcoming resistance.

Overcoming Resistance to the Use of Instructional  
Computing in Higher Education

Current emphasis on excellence has permeated all levels of education. While much of the emphasis recently has been on public school functioning, evidence would suggest that higher education will be under increasing scrutiny (Hodgkinson, 1986). Although the search for excellence is a desirable and welcome quest, there is limited evidence in the history of teacher education to indicate that innovation in educational practices is sustained for any appreciable period of time. In addition, when present, the innovations are often used in a limited manner.

One might conceptualize the adoption of educational innovation as the use of a "Band Wagon" approach. That is, someone develops a promising technique and publicizes the results of his/her efforts. Other individuals rush to join in the process and seek to replicate the results of the approach. Unfailingly, their efforts result in contradictory information as to the validity of

the approach and, after a period of intense debate, interest in the innovation recedes. Unfortunately, this process usually occurs in a timeframe that does not allow for adequate development and dissemination of the innovation. According to Rosenblum and Louis (1981), this condition is further complicated by the erroneous attitude of many individuals that the adoption of an innovation is synonymous with the implementation of the innovation. The ultimate result is an endless procession of educational "fads."

A recent example of this process in operation is the use of computers in higher education. Mosmann (1980) has stated that almost every reasonable application of computers in higher education has been implemented successfully somewhere. As with other innovations, however, the potential has not been realized (Melmed, 1986). Thus, the inference may exist that computers are just another educational fad.

Factors that threaten the widespread implementation of computers in higher education

have been identified as cost, the lack of availability of quality software and teacher resistance to the approach (Adams & Waldrop, 1985; Shane, 1982). Recently, a national task force has concluded that although significant progress has been made in integrating technology in education, the availability of sufficient hardware and software will remain a problem for some time into the future (National Task Force on Educational Technology, 1986). The contention of the authors, however, is that further acquisition of the materials, in and of itself, may not ensure the successful implementation of the approach. Rather, this or any other method will not reach its maximum potential unless the human factor is given priority. More specifically, human resistance to the implementation of computer technology may be the deciding factor in whether or not the technology is implemented.

The seemingly endless profusion of fads found within the history of education should not be surprising given the phenomenon of human resistance to change in life situations. It is

this resistance that gives rise to the bandwagon approach alluded to above. That is, what has appeared to be a change in educational methodology has merely been a cosmetic treatment of the methodology. For example, Rosenblum & Louis (1981) indicated that the open classroom concept, in many instances, was unsuccessful because teachers tried to superimpose a traditional structure onto a physically open space.

Within this context, the purpose of this article is to identify selected reasons for resistance to change, to identify the types of behaviors that result from this resistance and to suggest plausible means for overcoming resistance.

#### Resistance to Change

Skinner (1986) has addressed the difficulty involved in instigating change in the educational system in terms of the failure of programmed instruction and teaching machines to be used in any widescale fashion. Among the factors he cited were the potential threat of massive change in the nature of the educational delivery system, a failure to understand the principles on which the

innovations were based, and intervening societal events that forced a change in direction in educational goals. Mosmann (1980) suggested that the revolution in education resulting from the use of computers that had been predicted for a number of years had never materialized. He concluded that those predicting this revolution had (a) underestimated the difficulty of integrating the technology into the curriculum, (b) had overestimated the abilities of the individuals involved and (c) had misunderstood the economics of technology and the dynamics of education.

This was apparent in a study conducted by Offir (1983). Instructional computer programs were developed for professors of physiology by experts in computer usage. Considerable efforts were expended to ensure that the programs were developed and modified to fit the needs of each individual instructor. Even under these carefully monitored conditions, the professors did not use the programs.

Numerous factors that interfere with change have been identified. Levine (1984) points to



suspicion of new ideas, bureaucratic obstacles to change, fear of criticism, and lack of emphasis on individual motivation and origination of ideas within an organization. Additional factors that have been identified include human nature, fears and imagined threats (Caruth, Middlebrook, & Rachel, 1985), fear of change in relationships (Malinconico, 1983), perceptions of violations of professional values, inertia, lack of understanding, bad timing, and the belief that change implies criticism of past efforts (Weinbach, 1984).

Kotter and Schlesinger (1979) best summarize the thrust of the cited literature in identifying four primary reasons people resist change. These are as follows:

1. A desire not to lose something of value (self interest),
2. A misunderstanding of the change and its implications,
3. A belief that the change does not make sense for an organization,
4. An individual's low tolerance for change.

Resistant Behaviors

Resistant behaviors become evident when one attempts to introduce new methods of instruction in education. This pattern has been observed in the implementation of computer-assisted instruction (Ewert, 1984; Magidson, 1977; Olsen, 1980; Podemski, 1980). Behaviors manifested in the face of change include aggressive behavior, protective behavior, and avoidance behavior (Ewert, 1984). One must recognize that within any group of people, there is a strong probability that all of these types of behavior will be manifested by various individuals based on the personality characteristics of the individuals. Therefore, it is essential to make attempts to identify and respond to the unique dynamics behind each type of behavior. As an additional point of emphasis, no one type of behavior is more difficult to overcome than another.

In terms of aggressive behavior, the individual openly, directly attacks the innovation. The environment of higher education readily supports this type of behavior. The very

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essence of the process is based on the free exchange of ideas. The distinction here is that the resistant individual is not concerned with the exchange of information. Rather, the primary concern is to overwhelm the opposition to his/her position. This effect is often heightened by the committee structure and the concept of shared governance. In short, faculty members can openly resist the innovation by effective use of the established and accepted routine. Specific behaviors include complaining about the innovation and deliberately slowing down efforts to incorporate the technology (Caruth, Middlebrook, and Rachel, 1985). Persuasive, influential faculty members can easily threaten implementation by their vocal stance against the technology.

Individuals who do not, for one reason or another, find it beneficial to be open in their opposition to innovation often turn to subtle means of resistance. Examples of these behaviors include requesting unneeded information, and stalling for additional time (Caruth, Middlebrook, and Rachel, 1985). This phenomenon has been

discussed in the psychological literature as passive-aggressive behavior. The end result of this type of behavior is that the innovator becomes frustrated and withdraws the request to change.

The primary factor which causes difficulty in getting this individual involved is that the excuse(s) generated by him/her seem(s) plausible on the surface. That is, there is always the surface appearance of a good reason for the resistant behavior. In fact, the instigator of change can easily appear to be the unreasonable individual in the process. Paradoxically, the only way to successfully manage this type of behavior is to not get frustrated.

When neither of the aforementioned behavioral options seem viable, the faculty member may simply choose to not participate (Caruth, Middlebrook, & Rachel, 1985). This withdrawal from the process is particularly troublesome when the individual involved is a recognized leader in the department. With the refusal to participate in any fashion (in any discussion of the issue), the innovator

has difficulty in progressing to even the most basic stage of the change process; dispensing information about the technology.

#### Overcoming Resistance

Lewin (1951) described the process of change as a three step process of "unfreezing" the old attitude, changing, and refreezing the new attitude. In the process of unfreezing old ideas of functions, the individual must become sufficiently uncomfortable with the old ideas to want to change to the new (Weinbach, 1984). Jackson (1985) suggests that something on the crisis level is necessary to unfreeze an attitude. While creating that kind of urgency might be rather unlikely in higher education, Weinbach (1984) presented the possibilities of appeals to professional values and ethics, the use of logic, presentation of data, bargaining, or even threats. With the possible exception of the latter, these approaches are the foundation of initiating educational innovation.

In the case of computer technology, however, one may not need an artificially created crisis in

order for the unfreezing to occur. The historically rapid growth of the technology and the concomitant infusion of the technology into every facet of society has been projected to steadily increase. Given this fact, a generation of learners are coming into the higher education setting with a broad base of experience with the technology (Gilbert & Green, 1986). In the foreseeable future, faculty members may conceivably have to be prepared to deal with this new knowledge on a daily basis in classes.

In addition, public schools have been demanding training for teachers in appropriate use of the technology and higher education faculty have, in many cases, not been able (or willing) to respond. This demand is approaching crisis proportions. With both of these sources of pressure, the impetus for change is evident. Impetus for change does not mean that resistance will automatically be overcome. The administrator must be prepared to respond to the individual needs on which resistant behavior is based.

The "band wagon" approach that has accompanied the use of computers in higher education has created a failure set in the minds of many faculty members. That is, in the haste to demonstrate the utility of the technology, individuals have tried to demonstrate the widest variety of practical applications possible. Beyond this, in the zeal for demonstrating the usefulness of the computer, an atmosphere may have been created in which nothing less than perfection is acceptable to the unsophisticated user. For example, when class rosters are inaccurate or computer registration has erred, people who resist have used erroneous output from the computer to further strengthen their arguments for not becoming involved in what they perceive as a mistake prone device.

Further compounding this problem, many of the applications suggested initially were really not viable in terms of individual needs. For example, word processing is not important to an individual who does not type and/or who has adequate secretarial support to meet his/her needs. The

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power to perform complex statistical analyses is not important to the person not involved in data collection and analysis. Individuals who do not systematically analyze grades have no need for the programs that will accomplish this. As a result, this shotgun approach has given rise to a number of failed efforts. For individuals who resist, these failures can become a justification for not pursuing the matter further.

In responding to the individual needs of each faculty member, one must realize that the basic difference in philosophy between the higher education environment and the business or public school environment necessitates modification of approaches to overcoming resistance used in the latter. Whereas business and public schools focus on group-directed efforts and/or final decisions about implementation dictated from the top, higher education has long been predicated on individual pursuit of knowledge and individual determination of the content and direction of courses. Therefore, all attempts at overcoming resistance to change as delineated by Kotter and Schlesinger



(1979) must be fitted to a more individualized focus.

The first stage in the process is to get information regarding the innovation to the necessary people in a form that is uniquely meaningful to each person. In viewing the sources of resistance at this stage, the amount and manner of presentation of information must vary according to the resistance factors in operation for a particular individual. As discussed earlier, Offir (1983) found that even in a carefully controlled developmental environment, faculty members did not use the individualized computer-assisted instructional material produced. Conceivably, the failure to identify the underlying needs of the individuals involved in the study resulted in the program not attaining the desired expectations. If resistance is based on the fear of losing something of value, attempts should be made to identify the nature of the perceived loss. Perhaps the prevailing type of fear is that one will lose established relationships either in terms of

elements of the job or relationships with individuals (Malinconico, 1983).

In addressing a faculty member's concerns over a change in relationships, one must take care to specify all of the ways that functional integrity of the work unit may or may not change and the nature of changes in relationships along with parameters of new relationships (Kotter and Schlesinger, 1979). When adopting any innovative approach, there is a threat that one will suffer rejection from colleagues in an environment that breeds intense competition and professional jealousy. In a higher education setting, for example, using computer-assisted instruction may carry the implication for some individuals that his/her current means of teaching must be abandoned. Perhaps more important to some, there is the potential for the nature of relationships with students to change. According to some investigators (Eckert, Stecklein, & Sagan, 1959; Peters & Mayfield, 1982), relationships with students are one of the primary elements of job satisfaction for college faculty members.

Additionally, one may perceive a loss in job security, economic loss, or a loss of job status (Caruth, Middlebrook, & Rachel, 1985). In higher education, tenure status may or may not negate the fear of job loss. If, however, the individual believes that he/she does not have the ability to function within the parameters of the innovation, a loss of financial resources (e.g., merit pay) and job status (promotion) may be perceived. One possible coping skill for reducing the resulting anxiety is for the individual to exhibit the resistant behaviors delineated previously.

When introducing the innovation, individuals committed to the innovation often do not recognize these fears in others. They are so convinced of the validity of the approach that such concerns may never occur to them. As a result, they may unwittingly alienate others by appearing to be insensitive to individual concerns. Therefore, precaution must be taken to ensure that the information is presented in the right amount, in the right context, and at the right level for each individual.

Information must focus on those things in which the change will and will not result (Caruth, Middlebrook, & Rachel, 1985). In relation to computers in higher education, the information disseminated must emphasize that while the technology can rid the faculty of many burdensome repetitive tasks, it cannot replace the faculty member in providing instruction. That is, there may be many aspects of college teaching that people can do more effectively and efficiently.

At the very least, faculty must realize that there are viable alternatives to accomplish the task at hand (Jackson, 1985). In getting the resistant faculty member to this realization, one must acknowledge that certainly the methods currently being used by this individual are viable options. Additionally, it must be emphasized that any change carries the implication that the current method is wrong (Weinbach, 1984). Therefore, it is imperative that the computer be presented as an additional viable alternative rather than a replacement for a "wrong" practice.

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In overcoming a general intolerance for change, one must be able to provide a design of the necessary steps to be taken and the skills needed at each step. This factor is often overlooked in higher education in that the atmosphere is one of independent, self-motivated individuals. Irregardless, one must remember that the attainment of a new complex skill requires a simplistic, carefully designed approach in order to achieve maximum utilization of the skill.

Once the information has been presented, the individual must then confront a decision as to when the change should begin. Resistance at this point may be in the form of inertia (Weinbach, 1984). As the individual is faced with this step, the information provided at the first stage must be sufficient to indicate the specific behaviors the individual must perform in order to begin the innovation. In overcoming the inertia, the individual must act on the belief that the new technique will work for him/her (Jackson, 1985). It is for this reason that assessment during the information dissemination phase must focus on

determining the particular needs of each individual in relation to the technology.

In proceeding from information dissemination to implementation, the four categories of resistance delineated by Kotter and Schlesinger (1979) must again be dealt with by the instigators of the innovation. All of the resistance factors identified at the first stage are heightened at this stage due to the imminence of the change. Direction at this point might very well take the form of assistance in planning and actual modeling of the techniques (Caruth, Middlebrook, & Rachel, 1985). This is particularly true in the case of computers in that ample opportunity exists for errors in operation of the machine to bring the individual's fears to the surface.

If the individual actually is to take the steps to implement the innovation, he/she must be satisfied that certain conditions can be met. These conditions include the individual's valuing the reward perceived to be associated with performance, believing that he/she has the capability to perform well enough to attain the

reward, believing that the reward will actually be delivered and seeing no negative outcomes or unacceptable costs in performing the behavior (Jackson, 1985).

Hall and Loucks (1977) have indicated that most individuals who progress to the point of using the innovation cease development of the technique at the level of mechanical use. The result is, in essence, a compromise usage of the innovation. That is, the individual uses the innovation, but in an automatic, repetitive manner that is not likely to optimize the potential of the innovation. One might conclude that this is one possible factor in the "missing computer revolution" in higher education to which Mosmann (1980) alluded. In terms of the principles of human behavior this may be a predictable stopping point. This repetitive action represents a kind of efficiency that preserves energy and minimizes stress brought about by change.

A primary motivation in expending effort to get the individual to move into the next stage of refinement of the innovation involves a phenomenon

described by Kubie (1959). In discussing the fundamental difference between normal behavior and neurotic behavior, he concluded that the essential distinction lies in the fact that the neurotic individual repeats a behavior regardless of the appropriateness of the behavior in a given situation.

There is an element of this at this stage of implementation. The unthinking application of the methodology has a high probability of resulting in an inadequate outcome. This would ultimately result in frustration for the user and the relegation of the innovation to the proverbial closet.

If the individual is to arrive at the point of refined use of the technology, one must demonstrate to him/her that the extra costs involved in further development will result in greater efficiency in pursuing personal gains. A related aspect of this move is that the rewards begin to be more internalized than in previous steps. That is, the individual has progressed beyond the point where the innovation is



beneficial only in terms of fulfilling job functions to the recognition that intrinsic rewards can be realized through the methodology. This is not to say, however, that the need for external rewards have disappeared. The individual has merely become that person who is committed to a greater understanding of the innovation, thereby ensuring a richer application.

In progressing to the final stages of the implementation of the innovation, the individual must reverse a process of pursuing personal goals that has developed in the earlier stages. The decision now involves the degree to which one wishes to "network" with others. If further development of applications is to take place, one must now give up a piece of "self" in order to engage in mutual sharing of ideas and potential uses of the innovation. The sense of loss involves a belief that what has been gained will be sacrificed to others. This is a type of "professional paranoia" that tends to be rampant in higher education where sharing of labor may be perceived as sacrificing a competitive edge. The

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problems to be resolved at this level include defining spheres of influence and areas of mutual trust.

With the new problems facing higher education today (e.g., underprepared students, declining enrollments, nontraditional students), every effort must be made to develop to the maximum all avenues of potential benefit in the instructional process. In pursuit of this goal, one must remember that the success of any technique is not based on the technique in and of itself. Rather, success is based on the individual efforts resulting from personal commitment to the change. Careful attention to overcoming the resistant behaviors as delineated here can build this commitment and prevent the relegation of yet another promising methodology to the status of "educational fad."

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